
A New Species of *Andira* (Leguminosae, Papilionoideae) from the Venezuelan Guayana

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ABSTRACT. A new species of *Andira* from Estado Bolívar, Venezuela, is described. *Andira tervequinata* R. T. Pennington, G. Aymard & N. Cuello is clearly distinct from all other *Andira* species, although it might be confused with *A. trifoliolata* Ducke because specimens often have some trifoliate leaves.

While preparing the account of *Andira* for the *Flora of the Venezuelan Guayana*, we found four specimens from two localities in Estado Bolívar representing a distinctive new species. The region covered by the *Flora of the Venezuelan Guayana* is one of particular interest for *Andira*. Two specimens (*P. E. Berry et al.* 5102 and *A. Gentry & S. Tillett* 10889) from Estado Amazonas may also represent new species, but unfortunately the material currently available is inadequate to confidently describe them. New collections are needed from the white sand savanna and forest habitat, where these specimens were collected. These potential new species, the new species described in this paper, and new species of *Andira* found in Amazonian Ecuador and in the Brazilian State of Amapá (R. T. Pennington, unpublished data) together indicate that *Andira* has undergone considerable diversification around the fringes of Amazonia.

Andira tervequinata R. T. Pennington, G. Aymard & N. Cuello, sp. nov. TYPE: Venezuela. Estado Bolívar: Distrito Heres, west bank of Río Trueno Alto, 35 km W of Chiguao, high plateau, ecotone between gallery forest and savanna, 06°07'N, 63°22'W, 480 m, 23 Mar. 1985, *Huber* 10345 (holotype, NY; isotypes, AAU, E, HBG, INPA, K, M, MO, MY, MYF, P, PORT, RB, US, VEN). Figure 1A–M.

Species bene distincta, quae fortasse cum *A. trifoliolata*

Ducke confusa possit, sed aliquae folia quinquefoliolata habeat (in *A. trifoliolata* omnia folia semper trifoliolata sunt), foliolis infra indumento pilorum brevium adpressorum, apicibus retusis aliquando emarginatis cum nervo primario canaliculato (in *A. trifoliolata* foliolis infra glabris cum apicibus acuminatis, nervo primario planiusculo) differt.

Small tree or shrub to 7 m tall; twigs very dark brown with raised elongated lenticels, outer bark very dark brown (almost black), this layer often flaking to reveal red-brown beneath, sparsely red-brown \pm appressed pubescent, glabrescent in age. Stipules to 7 mm long, narrow, caducous, red-brown appressed pubescent; leaves imparipinnate; leaf axis 4–16 cm long; rachis canaliculate, longitudinally ridged, dark brown flaking to reveal red-brown beneath, glabrous; stipels tiny; petiolules 3–8 mm long, sparsely appressed pubescent; leaflets in 1–2 pairs, coriaceous, 3.5–11 \times 2–5 cm, wide elliptic to wide obovate, glabrous above, with short, appressed, pale hairs beneath; base obtuse; apex obtuse to rounded, generally retuse, occasionally emarginate; primary vein channeled above, raised beneath; secondary veins 6–7 pairs, plane above, very slightly raised beneath, pattern eucamptodromous becoming brochidodromous. Panicles axillary and terminal, 10–12 cm long, sparsely red-brown appressed pubescent; bracts 2 mm long, caducous; pedicels 1–1.5 mm long; bracteoles not seen (presumably small and early caducous). Flowers pale purplish white, 9 mm long. Calyx 4 mm long, glabrous except for a few scattered hairs on the lobes; lobes 1 mm long, obtuse with pointed acumens. Standard-blade 6 \times 8 mm, claw 3 mm; wing 6 \times 3 mm, claw 4 mm; keel 5 \times 3 mm, claw 4 mm. Stamens 6–7 mm long, the filaments united for 4–5 mm, free for 1–2 mm. Gynoecium 9–9.5 mm long, the upper surface and distal end of the lower surface of the ovary with sparse hairs; stipe

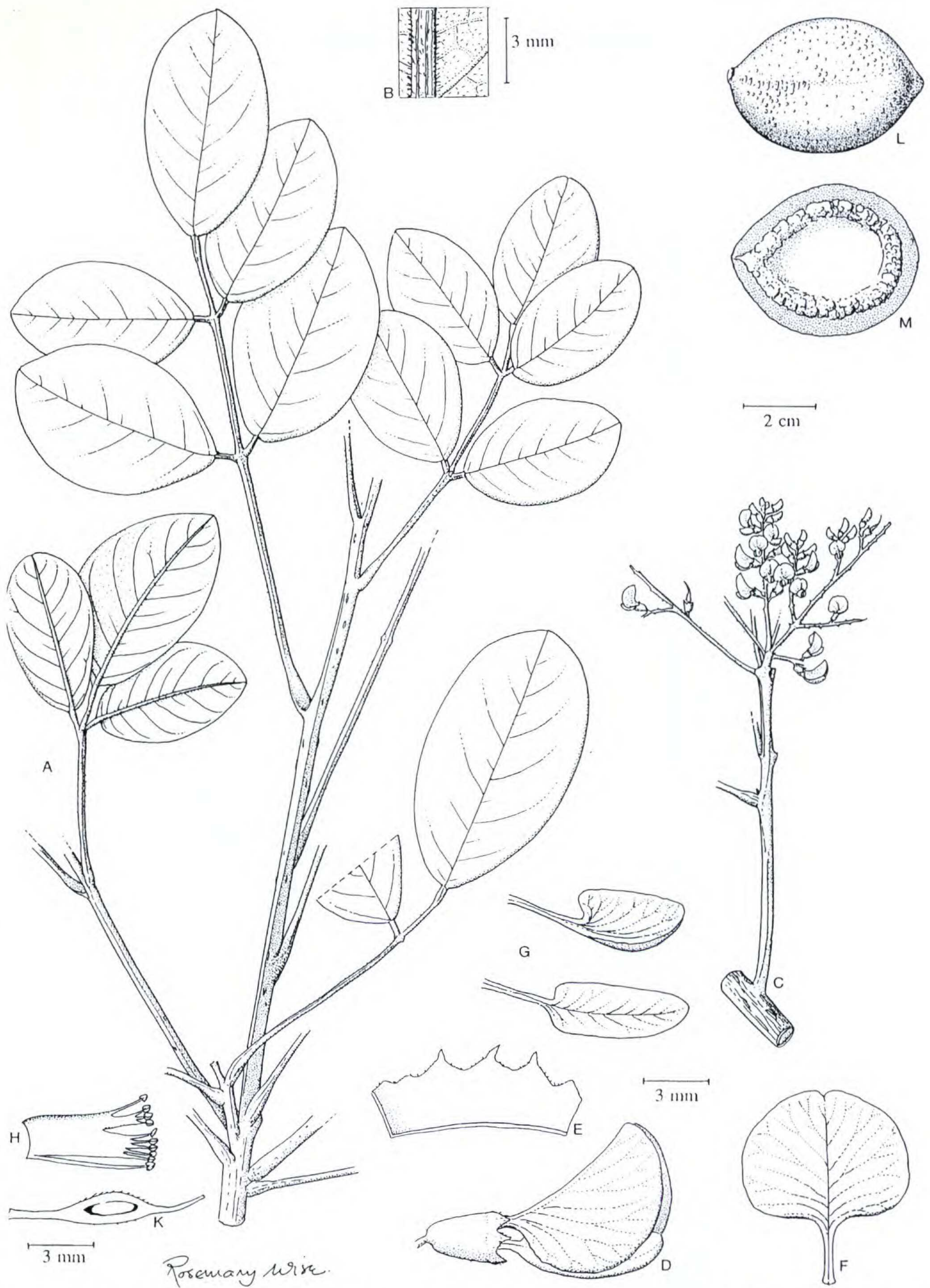


Figure 1. A–M. *Andira tervequinata* R. T. Pennington, G. Aymard & N. Cuello. —A. Habit. —B. Leaflet under-surface. —C. Inflorescence. —D. Flower. —E. Detail of calyx (inner surface). —F. Standard petal (inner surface). —G. Keel petal (above; inner surface) and wing petal (below; outer surface). —H. Androecium. —K. Gynoecium. —L. Fruit. —M. Fruit in section. Drawn from *Huber 10345* (flowering) and *Holst & Liesner 2798* (fruiting).

3.5–4 mm long; ovary 3 mm long; style 2.5 mm long; ovules 1. Fruits green or gray-green, drying dark brown to red-brown, the surface with pale, raised specks, \pm globose, 5.5 cm long \times 3.8 cm wide \times 3.8 cm high; suture raised below, slightly raised above; styler remnant minute or absent; mesocarp 3 mm thick in cross section, pale, amorphous (comprising parenchyma and patches of stone cells in microscopic section); endocarp 4–5 mm thick in cross section, hard, pale, amorphous (comprising stone cells in microscopic section); seed white.

Ecology and distribution. The species is known only from the former Distrito Heres and Distrito Piar in Estado Bolívar, Venezuela, at 350 to 500 m elevation. It has been collected in gallery forest, in shrub and tree islands in savanna dominated by *Trachypogon plumosus* Nees (G. Aymard, pers. obs.; this vegetation was on conglomerated sandstones), and in the ecotone between savanna and gallery forest. It has been recorded as flowering in March and possessing young and mature fruits in May.

Andira tervequinata is a most distinct species. The only other *Andira* species that has trifoliolate leaves is *A. trifoliolata*, which occurs in Colombia and Brazil, and in Venezuela has only been collected in Estado Amazonas. However, the leaves of *A. tervequinata* show several differences from those of *A. trifoliolata*. Diagnostic characters are the number of leaflets, the nature of the primary vein, the shape of the leaflet apex, and the indumentum on the leaflet undersurface. *Andira trifoliolata* has all leaves trifoliolate, whereas *A. tervequinata* has leaves with three to five leaflets. In *Andira trifoliolata* leaflets have a plane primary vein on their upper surfaces, whereas in *A. tervequinata* the primary vein is channeled. In *Andira trifoliolata* leaflets are acuminate at the apex, whereas in *A. tervequinata* the leaflet apex is retuse or emarginate. The leaflet undersurface is glabrous in *A. trifoliolata*, whereas in *A. tervequinata* it has an indumentum of short, appressed hairs. Although these diagnostic characters are vegetative, with the exception of leaf apex shape they are of considerable phylogenetic significance in *Andira* and have been included in cladistic data matrices (Pennington, in press; R. T. Pennington, unpublished data). They do not vary widely within individual species of *Andira* and are useful characters for species delimitation.

The species also differ in the size of the tree, leaflet shape, and fruit characters, although of these

features none are wholly diagnostic. *Andira tervequinata* is a shrub or small tree to 7 m in height, whereas *A. trifoliolata* is generally a larger tree (to 20 m). Leaflets of *A. tervequinata* are often obovate, whereas this is a rare condition in *A. trifoliolata*, where the leaflets are generally elliptic. Further diagnostic characters may be found in the fruit, but fruiting collections of both species are few and poor. *Andira trifoliolata* generally has smaller fruits (to 3.5 cm long), and its fruit surface (when dry) is dark brown to almost black, while that of *A. tervequinata* is generally more red-brown with pale, raised specks.

Because *A. tervequinata* has a fruit with an endocarp composed of stone cells (B. Gemeinholzer and R. T. Pennington, unpublished data), it probably belongs to a clade of *Andira* species defined by this endocarp type (Pennington, 1995), which includes the central Amazonian species *A. unifoliolata* Ducke and *A. parviflora* Ducke, and *A. grandistipula* Amshoff, which is endemic to the Pakaraima mountains of Guyana.

The species is named for its characteristic leaves, which have either three or five leaflets.

Local Names. Pilón rebalsero.

Paratypes. VENEZUELA. **Bolívar:** Distrito Heres, A lo largo del Río El Trueno al N de la base del Guaiquinima Tepui, bosques húmedos primarios alternado con sabanas arboladas, 06°14'N, 63°27'W, 350 m, 20 May 1987, Aymard 6147 (MO, NY, PORT); Distrito Piar, Río Aparamán at Kambay-merú rapids, SE base of Amaruay-tepui, W of Aparamán-tepui, E of Auyan-tepui, gallery forest, 05°55'N, 62°13'W, 500 m, 7 May 1986, Holst & Liesner 2798 (E, MO); Distrito Piar, Río Aparamán, Kambay-merú rapids, ca. 3 km SE of SSE corner of Amaruay tepui, 05°55'N, 62°13'W, 500 m, 7 May 1986, Liesner & Holst 20674 (E, MO).

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Literature Cited

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